

Amendments to the Claims:

Please cancel claims 14 and 27-69. Please amend claims 1-7, 13, 15-18, and 20-26 as follows. Please add new claims 70-91 as follows.

This listing of claims replaces all prior versions, and listings, of claims in the application.

Listing of claims:

1. (currently amended) A system for combining waves of electromagnetic energy comprising:
 - a plurality of first transmission plates, each plate having an input surface at a first edge and an output surface at a second edge,
 - a plurality of second transmission plates, each plate having an input surface at a first edge and an output surface at a second edge; and
 - at least one of the first plurality of transmission plates and the second plurality of transmission plates further including a reflection discontinuity for reflecting emitted waves that enter the input surface to the output surface, wherein the input surfaces of the plurality of first transmission plates lie along a first input plane and wherein the input surfaces of the second transmission plates lie along a second input plane, and wherein the output surfaces of the plurality of first and second transmission plates lie along a common output plane.
2. (currently amended) The system of claim 1 further comprising a plurality of first bars corresponding to the plurality of first transmission plates, each first bar of comprising a first plurality of wave emitters and a plurality of second bars corresponding to the plurality of second transmission plates, each second bar comprising of a second plurality of wave emitters.
3. (currently amended) The system of claim 2 wherein the first bars ~~bar~~ and second bars ~~bar~~ are diode bars.

4. (currently amended) The system of claim 2 wherein:

the input surface of each ~~the~~ first transmission plate is substantially parallel to one of the first bars ~~bar~~ such that a plurality of first waves emitted by the first plurality of wave emitters enter the input surface in a direction of propagation that is substantially normal to the input surface; and wherein

the input surface of each ~~the~~ second transmission plate is being substantially parallel to one of the second bars ~~bar~~ such that a plurality of second waves emitted by the second plurality of wave emitters enter the input surface in a direction of propagation that is substantially normal to the input surface

5. (currently amended) The system of claim 4 wherein ~~the system further comprises a plurality of the first bars, a plurality of the second bars, a plurality of the first transmission plates corresponding to the plurality of first bars and a plurality of the second transmission plates corresponding to the plurality of second bars and wherein the plurality of first and second transmission plates are interleaved and positioned with respect to the corresponding pluralities of first and second bars such that the emitted waves of the first plurality of wave emitters and the second plurality of wave emitters are interleaved in an output region comprising the output surfaces of the first and second transmission plates.~~
6. (currently amended) The system of claim 1 wherein the transmission plates are positioned such that the output surfaces ~~surface~~ of the first transmission plates ~~plate~~ and the output surfaces ~~surface~~ of the second transmission plates ~~plate~~ are co-planar and adjacent.
7. (currently amended) The system of claim 1 wherein the transmission plates are positioned such that output waves provided at the output surfaces ~~surface~~ of the first transmission plates ~~plate~~ and the output surfaces ~~surface~~ of the second transmission plates ~~plate~~ are output in a direction of propagation that is substantially normal to the output surfaces ~~surface~~.

8. (original) The system of claim 1 wherein the reflection discontinuity comprises an angled edge surface of the transmission plate.
9. (original) The system of claim 8 wherein the angled edge surface is treated with a reflective coating.
10. (original) The system of claim 1 wherein the waves entering the first and second transmission plates undergo total internal reflection between the input surface and the output surface.
11. (original) The system of claim 1 wherein the first and second transmission plates are bonded together.
12. (original) The system of claim 1 further comprising a shim between the first and second transmission plates and wherein the first and second transmission plates are bonded to the shim.
13. (currently amended) The system of claim 1 wherein both of the pluralities of first and second transmission plates include the reflection discontinuity.
14. (canceled)
15. (currently amended) The system of claim 1 [[14]] wherein the first input plane and second input plane are coplanar.
16. (currently amended) The system of claim 1 [[14]] wherein the first input plane and second input plane are parallel and spaced apart.

17. (currently amended) The system of claim 1 [[14]] wherein the first input plane and second input plane are at an angle relative to each other.
18. (currently amended) The system of claim 1 [[14]] wherein at least one of the first input plane and second input plane is at an angle relative to the output plane.
19. (original) The system of claim 18, wherein the angle is 90°.
20. (currently amended) The system of claim 1 [[14]] wherein at least one of the first input plane and second input plane is parallel to the output plane.
21. (currently amended) The system of claim 1 [[14]] wherein the input surfaces of at least one of the plurality of the first and second transmission plates are bonded to a common input base plate.
22. (currently amended) The system of claim 1 [[14]] wherein the output surfaces of the first and second transmission plates are bonded to a common output base plate.
23. (currently amended) The system of claim 1 wherein the input surfaces ~~surface~~ of at least one of the plurality of first and second pluralities of transmission plates include ~~includes~~ an integral lens structure for focusing incident electromagnetic energy to within the respective first and second pluralities of transmission plates ~~plate~~.
24. (currently amended) The system of claim 1 wherein the first transmission plates each ~~have plate~~ has a propagation length between the input surface and the output surface that is different from that of the second transmission plates ~~plate~~.
25. (original) The system of claim 1 wherein the waves of electromagnetic energy comprise laser beams.

26. (currently amended) The system of claim 1 ~~wherein the system comprises a plurality of the first transmission plates and a plurality of the second transmission plates and wherein the pluralities~~ plurality of first and second transmission plates are interleaved.

27-69 (canceled)

70. (new) A system for combining waves of electromagnetic energy comprising:
a plurality of first bars, each first bar having a first plurality of wave emitters;
a plurality of second bars, each second bar having a second plurality of wave emitters;
a plurality of first transmission plates, each having an input surface at a first edge and an output surface at a second edge,
a plurality of second transmission plates, each having an input surface at a first edge and an output surface at a second edge; and
at least one of the plurality of first transmission plates and the plurality of second transmission plates further including a reflection discontinuity for reflecting emitted waves that enter the input surface to the output surface;
wherein the input surfaces of the first transmission plates are each substantially parallel to a corresponding one of the first bars such that a plurality of first waves emitted by the first plurality of wave emitters enter the input surfaces in a direction of propagation that is substantially normal to the input surfaces;
wherein the input surfaces of the second transmission plates are each substantially parallel to a corresponding one of the second bars such that a plurality of second waves emitted by the second plurality of wave emitters enter the input surfaces in a direction of propagation that is substantially normal to the input surfaces, and
wherein the plurality of first and second transmission plates are interleaved and positioned with respect to the corresponding pluralities of first and second bars such that the emitted waves of the first plurality of wave emitters and the second plurality of wave

emitters are interleaved in an output region comprising the output surfaces of the first and second transmission plates.

71. (new) The system of claim 70 wherein the first bars and second bars are diode bars.
72. (new) The system of claim 70 wherein the transmission plates are positioned such that the output surfaces of the first transmission plates and the output surfaces of the second transmission plates are co-planar and adjacent.
73. (new) The system of claim 70 wherein the transmission plates are positioned such that output waves provided at the output surfaces of the first transmission plates and the output surfaces of the second transmission plates are output in a direction of propagation that is substantially normal to the output surfaces.
74. (new) The system of claim 70 wherein the reflection discontinuity comprises an angled edge surface of the transmission plate.
75. (new) The system of claim 74 wherein the angled edge surface is treated with a reflective coating.
76. (new) The system of claim 70 wherein the waves entering the first and second transmission plates undergo total internal reflection between the input surface and the output surface.
77. (new) The system of claim 70 wherein the first and second transmission plates are bonded together.

78. (new) The system of claim 70 further comprising a shim between the first and second transmission plates and wherein the first and second transmission plates are bonded to the shim.
79. (new) The system of claim 70 wherein both of the pluralities of first and second transmission plates include the reflection discontinuity.
80. (new) The system of claim 70 wherein the input surfaces of the plurality of first transmission plates lie along a first input plane and wherein the input surfaces of the second transmission plates lie along a second input plane, and wherein the output surfaces of the plurality of first and second transmission plates lie along a common output plane.
81. (new) The system of claim 80 wherein the first input plane and second input plane are coplanar.
82. (new) The system of claim 80 wherein the first input plane and second input plane are parallel and spaced apart.
83. (new) The system of claim 80 wherein the first input plane and second input plane are at an angle relative to each other.
84. (new) The system of claim 80 wherein at least one of the first input plane and second input plane is at an angle relative to the output plane.
85. (new) The system of claim 84, wherein the angle is 90°.
86. (new) The system of claim 80 wherein at least one of the first input plane and second input plane is parallel to the output plane.

87. (new) The system of claim 80 wherein the input surfaces of at least one of the plurality of the first and second transmission plates are bonded to a common input base plate.
88. (new) The system of claim 80 wherein the output surfaces of the first and second transmission plates are bonded to a common output base plate.
89. (new) The system of claim 70 wherein the input surfaces of at least one of the plurality of first and second pluralities of transmission plates include an integral lens structure for focusing incident electromagnetic energy to within the respective first and second pluralities of transmission plates.
90. (new) The system of claim 70 wherein the first transmission plates each have a propagation length between the input surface and the output surface that is different from that of the second transmission plates.
91. (new) The system of claim 70 wherein the waves of electromagnetic energy comprise laser beams.